

PRE-APPEAL BRIEF REQUEST FOR REVIEWDocket Number (Optional)
TSM03-0760

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Application Number
10/803,712Filed
March 18, 2004First Named Inventor
Yeo, et al.Art Unit
1795Examiner
Brittany L. Raymond

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

applicant/inventor.

assignee of record of the entire interest.

See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

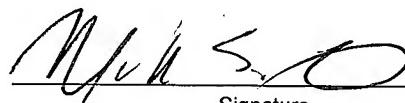
attorney or agent of record.

Registration number 36,491

attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34. _____

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.



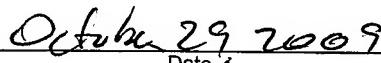
Signature

Mark E. Courtney

Typed or printed name

972-732-1001

Telephone number



Date

*Total of _____ forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Yeo, *et al.* Docket No.: TSM03-0760
Serial No.: 10/803,712 Art Unit: 1795
Filed: March 18, 2004 Examiner: Raymond, Brittany L.
For: Immersion Fluid for Immersion Lithography, and Method of Performing Immersion Lithography

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir:

Claims 1-38, 40-49, 52-55, 58-60, 62-68, 70-71 and 73-75 are pending in the current application. Claims 1-37 were previously withdrawn. Applicants appeal the final rejection of claims 38, 40-49, and 59, which were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,715,039 to Fukuda, *et al.* (“Fukuda”), in view of U.S. Patent Pub. No. 2004/0175647 to French, *et al.* (“French ‘647”) and U.S. Patent Pub. No. 2004/0209411 to Fisher, *et al.* (“Fisher”); the final rejection of claims 52-55, 63-68, 70, 71 and 74, which were rejected under 35 U.S.C. §103(a) as being unpatentable over Fukuda, French ‘647, Fisher and further in view of U.S. Patent Pub. No. 2005/0164522 to Kunz, *et al.*, (“Kunz”); the final rejection of claims 38, 40-49 and 59 rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Pub. No. 2003/0174408 to Rostalski, *et al.* (“Rostalski”) in view of Casiday; “Water Hardness: Inorganic Reactions Experiment” (“Casiday”), French ‘647 and Fisher; the final rejection of claims 52-55, 63-68, 70, 71, and 74, rejected under 35 U.S.C. §103(a) as being unpatentable over Rostalski, Casiday, French’647, and Fisher, and further in view of Kunz; the final rejection of claim 62 under 35 U.S.C. §103(a) as being unpatentable over Rostalski, Casiday, French’647, and Fisher, and further in view of U.S. Patent Pub. No. 2004/0038556 to French, *et al.* (“French ‘556”); the final rejection of claims 58, 60, 73 and 75 under 35 U.S.C.

§103(a) as being unpatentable over Rostalski, Casiday, French ‘647, Fisher, and Kunz, and further in view of U.S. Patent Pub. No. 2005/0018208 to Levinson (“Levinson”).

Applicants submit the claims recite features not present in Rostalski, Casiday, French ‘647, Fisher, Levinson, Fukuda, or French ‘556, even when combined as proposed by the Examiner, and that Kunz teaches away from the claimed inventions and may not be combined with the remaining references as proposed by the Examiner. Thus, each rejected claim is not obvious over the relied upon combinations of references and is allowable over these rejections.

Applicants submitted a Response under 37 C.F.R. §1.116 mailed June 24, 2009, after the final rejection; and the arguments made herein present the claims including the amendments made to claims 38 and 52 in that paper, which the Advisory Action indicates will be entered on the filing of an appeal.

1. *Issue – The § 103 rejections of claim 38 over Fukuda, in view of French ‘647 and Fisher; and the § 103 rejections of claim 38 over Rostalski, in view of Casiday, French ‘647 and Fisher.*

Claim 38 is the first independent claim pending, and it now recites in part:

...providing the semiconductor structure...the structure coated with...the topmost photoresist layer comprising a chemically amplified photoresist that forms a photo-generated acid catalyst of the form HA, where H is hydrogen;

introducing an immersion fluid comprising water and a fluorine containing compound...and the water in contact with a portion of the photoresist layer...

The Examiner first cites Fukuda, French ‘647 and Fisher as providing the elements of claim 38.

Claim 38 recites a feature previously found in other claims; the use of fluorine containing compound in an immersion fluid in a space between an optical surface that is soluble in water and the photoresist layer. The Examiner has cited Kunz for the use of the fluorine containing compound.

Applicants respond that Kunz teaches away from the claimed invention and is not available to combine with the remaining three references to provide the recited features. Kunz specifically requires that the photoresist used not be soluble in the immersion fluid (see, e.g., paragraph [0119] of Kunz,

which states "...the material 550 (the resist used in Kunz) may not be substantially soluble in the fluid composition 530" (the immersion fluid of Kunz).

In contrast to the disclosures and methods prescribed by Kunz, the method of claim 38 recites a photoresist including hydrogen and an immersion fluid specifically comprising water; the photoresist in Applicants' method is clearly soluble in the immersion fluid (water). Thus, the claimed method is in direct contradiction to the method described by the Kunz reference. One skilled in the art would not combine the method of Kunz with a water based immersion method such as claimed by Applicants. As cautioned by the MPEP, "A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." MPEP § 2141.02 (citations omitted).

With respect to the § 103 rejections of claim 38 over Rostalski in view of Casiday, French '647 and Fisher, Applicants again assert that this combination still does not provide the recited method of claim 38, particularly the use of the fluorine containing compound, and that the use of Kunz for these features is not proper as Kunz teaches away from the claimed method. Applicants maintain that claim 38 is non-obvious over the rejections and is allowable.

2. *Issue - the rejections of claim 63 under §103(a) over Fukuda, French '647, Fisher and further in view of Kunz, and the rejection under §103(a) over Rostalski, Casiday, French, Fisher, and further in view of Kunz.*

With respect to claim 63, the remaining independent claim, claim 63 recites in part:

...providing the semiconductor structure...coated with...the topmost photoresist layer being a chemically amplified photoresist that forms a photo-generated acid catalyst of the form HA, where H is hydrogen;

introducing water having a fluorine containing compound dissolved therein into a space between an optical surface that is soluble in water and...the water contacting a portion of the optical surface and a portion of the photoresist layer...

The Examiner cites Fukuda, French '647, and Fisher, and admits that the combination of these three references still does not provide the recited features of claim 63. The Examiner then asserts that it would be obvious to use the sodium fluoride of Kunz in the processes of the other references.

Applicants reply that one skilled in the art would not combine the non-water based immersion fluid of Kunz into a water based system as in Applicants' claim, that Kunz teaches away from the recited method, and that Kunz, therefore, is not properly combinable with the remaining references. Applicants conclude claim 63 is not obvious over the rejection.

With respect to the rejection of claim 63 over Rostalski, Casiday, French '647 and Fisher, and further in view of Kunz, Applicants note that the combination of Rostalski, Casiday, French '647, and Fisher does not provide the claimed method as recited in claim 63; thus, the Examiner looks to Kunz for the missing features. However, again, Applicants believe the combination is not proper as Kunz teaches away from the use of a photoresist in a fluid where the photoresist is soluble in the fluid. Accordingly, Applicants believe that the claimed method is not obvious over the combination of the five references and is allowable.

3. *Issue – the rejections of dependent claims 40-49, and 59 under §103(a) over Fukuda, in view of French '647 and Fisher over Rostalski, in view of Casiday, French '647 and Fisher.*

Each of these claims depends from and recites additional features on the method of claim 38. Since each of these dependent claims necessarily incorporates and recites the allowable method steps of claim 38, each of these dependent claims is also believed to be allowable over each of these rejections.

4. *Issue - the rejections under §103(a) of dependent claims 52-55 over Fukuda, French '647, Fisher and further in view of Kunz, and over Rostalski, Casiday, French '647, Fisher, and further in view of Kunz.*

Each of these dependent claims depends from and adds additional method features to the method recited in claim 38. As each of these dependent claims depends from and incorporates the allowable features of claim 38, for this reason at least, each one of these claims is allowable.

5. *Issue - the rejections under §103(a) of claims 64-68, 70, 71 and 74 over Fukuda, French '647, Fisher, and further in view of Kunz, and over Rostalski, Casiday, French '647, Fisher, and further in view of Kunz.*

As argued above, Applicants believe that parent claim 63 is non-obvious and allowable. As each of these dependent claims depends from and incorporates the allowable features of claim 63, for this reason at least, each of these claims is also allowable.

6. *Issue - the rejection of claim 62 under §103 over Rostalski, Casiday, French '647, Fisher, and further in view of Fisher '556.*

Claim 62 is a dependent claim that adds a composition to the method recited in claim 38; and Fisher '556 is cited for the particular features of the dependent claim. Dependent claim 62 necessarily incorporates the allowable features of parent claim 38. Accordingly, Applicants believe that this claim is also allowable for at least the reason of reciting the allowable method of the parent claim.

7. *Issue - The rejection of claims 58, 60, 73 and 75 under §103(a) as being unpatentable over Rostalski, Casiday, French '647, Fisher, Kunz, and further in view of Levinson.*

The Levinson reference is cited for the particular features recited in the dependent method claims; however, as argued above, parent claims 38 and 63 are believed to be non-obvious over the combination and allowable. Accordingly, these dependent claims, which necessarily incorporate and recite the allowable methods of the parent claims, are also allowable.

Applicants respectfully request reconsideration of the claims in light of the above arguments. The Commissioner is hereby authorized to charge any fees due in connection with this filing, or credit any overpayment, to Deposit Account No. 50-1065.

Respectfully submitted,

Date October 29, 2009



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